

Notice of Allowability

Application No.

10/525,437

Examiner

Brian M. Healy

Applicant(s)

ISHII ET AL.

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2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the preliminary amendment filed 02/22/2005.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 02222005
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter**REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: the closest prior art of record, Japanese Patent Application No. 2002-221627 teaches (Figs.1-3) an optical fiber communications system with an optical fiber 1 and a spherical end section 7 which sends light to receiver 9.

Japanese Patent Application 627' does not teach or suggest the claimed optical communications system that includes an optical fiber with a spherical end such that the radiant light emitted from the spherical end surface has a numerical aperture not larger than 0.35 wherein the light receiver is placed in a range of either 0 (less than) d (less than or equal to) $r \cdot D / (n - n_1)$ when a diameter of the light receiving element or system is not larger than D (the fiber diameter) and within a range of D (less than or equal to) d (less than or equal to) $r \cdot D$

$/(n - n_1)$ when the reception element or system is larger than D . These limitations are recited in claims 1-2. Dependent claims 5-7, 9-13 and 18 are dependent upon either claims 1 or 2 and are also allowed by virtue of their dependency. (See these dependent claims for their additionally recited limitations.).

Japanese Patent Application 627' does not teach or suggest the claimed optical communications system that includes an optical communications system with an optical

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fiber having a spherical end and wherein the radiant light emitted from the spherical end surface has a numerical aperture of 0.4-0.6 and the light receiving element or system lies within a range of 0 (less than) d (distance) (less than) $2D$ (fiber diameter) when a diameter of the light receiving element or system is not larger than D and within a range of $0.5D$ (less than) d (less than) $2D$ when the diameter of the light receiving element or system is larger than D . These limitations are recited in claims 3 and 4. Dependent claims 8, 14-17, 19 and 20 includes the limitations of either claims 3 or 4 and are also allowed by virtue of their dependency (See these dependent claims for their additionally recited limitations).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

A copy of PTO-1449 will be attached to this office action.

The following references are also cited by the Examiner as being pertinent prior art: Jewell et. al., U.S.P. No. 6,741,777 (Figs.1-19), Ishii et. al., U.S. Patent Application Publication No. US 2005/0232537A1 (See entire reference), Timmermann, U.S.P. No. 4,137,060 (Figs.1-3), Cina et. al., U.S.P. No.5,504,828 (Figs.1-5) and Prince, U.S.P. No. 5,304,228 (Figs.1-6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian M. Healy whose telephone number is (571)272-2347. The examiner can normally be reached on Compressed schedule 6AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571)272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian M. Healy
Primary Examiner
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A handwritten signature in black ink, appearing to read 'B. Healy', is written over a horizontal line.

BRIAN HEALY
PRIMARY PATENT EXAMINER